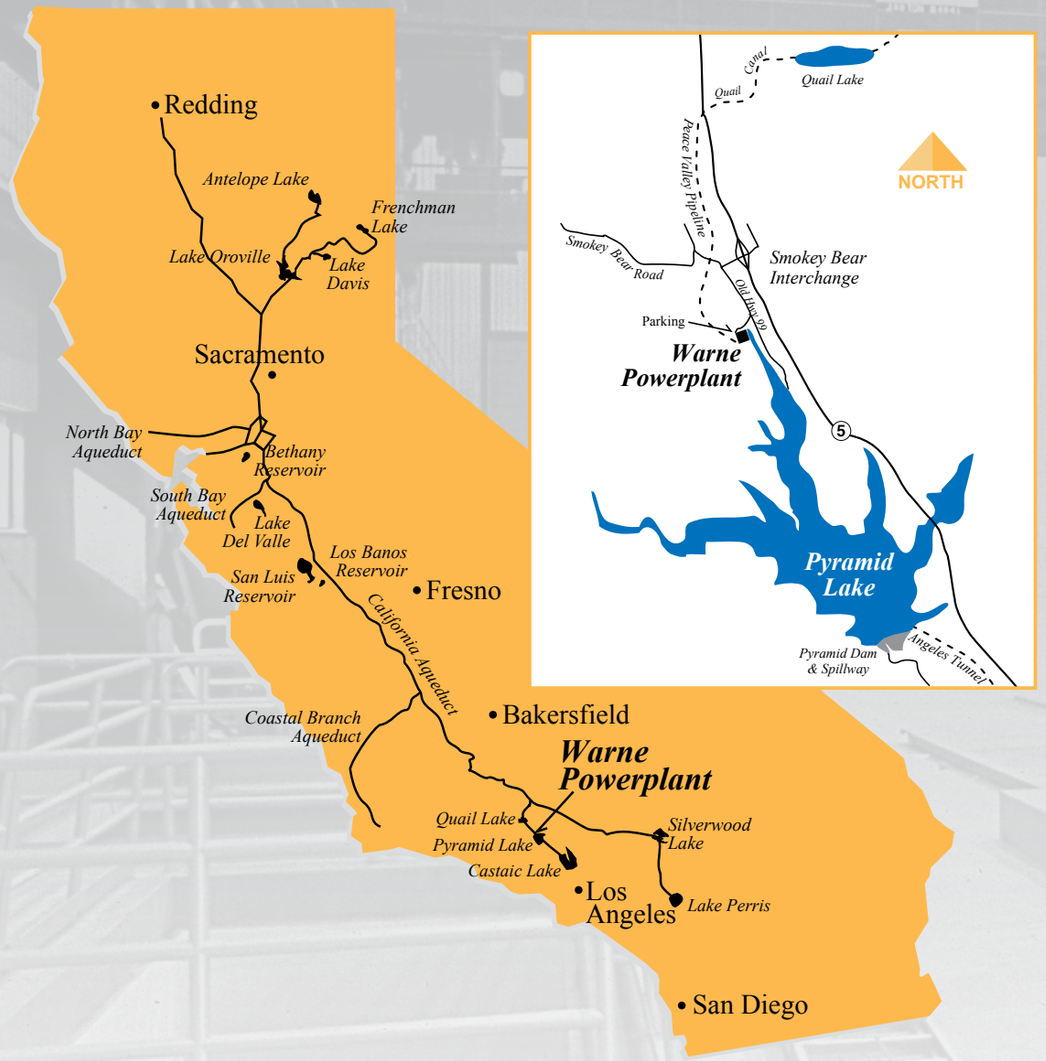

Warne Powerplant is approximately 10 miles south of Gorman in northwest Los Angeles County.

California Department of Water Resources' Mission...

To manage the water of California, in cooperation with other agencies, to benefit the state's people and protect, restore, and enhance the natural and human environments.

FOR MORE INFORMATION

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STATE WATER PROJECT

WILLIAM E. WARNE POWERPLANT

THE STATE WATER PROJECT

Planned, designed, constructed and operated by the California Department of Water Resources (DWR), the State Water Project (SWP) is the largest state-built, multi-purpose, user-financed water project in the United States.

The SWP, spanning more than 600 miles from Northern California to Southern California, includes 34 storage facilities, 20 pumping plants, four pumping-generating plants, five hydroelectric power plants, three pump stations, and approximately 700 miles of canals, tunnels, and pipelines.

The SWP's main purpose is to provide a water supply – that is, to divert and store water during wet periods and distribute it to areas of need in Northern California, the San Francisco Bay area, the San Joaquin Valley, the Central Coast, and Southern California. Other project purposes include flood control, power generation, recreation, fish and wildlife enhancement, and water quality improvements to the Sacramento-San Joaquin Delta.

The $1.75 billion bond issue of 1960 provided funding for the SWP and payments received from 29 contracting agencies are paying off the bonds. These 29 urban and agricultural water agencies have long-term contracts for the delivery of SWP water. Approximately 70 percent of SWP water goes to urban users and 30 percent to agricultural users. These SWP contracting agencies are repaying the cost, including interest, of financing, building, operating, and maintaining the SWP water storage and delivery system.

WARNE POWERPLANT

Tucked away in a remote corner of Los Angeles County near Pyramid Lake, Warne Powerplant was designed to recapture energy expended while pumping water through the State Water Project (SWP).

The powerplant is a part of the West Branch of the SWP's California Aqueduct, which carries water to Los Angeles and other coastal cities. Water flows from Warne Powerplant and Pyramid Lake, through the Angeles Tunnel, the Castaic Powerplant and into Castaic Lake, which is the terminus of the West Branch.

Warne Powerplant recovers about 25 percent of the energy used by the SWP's A.D. Edmonston Pumping Plant to deliver water to Pyramid Lake. Edmonston lifts water 1,926 feet up the Tehachapis and through 10 miles of tunnels and siphons which cross the mountain range.

Operating since 1982, the Warne Powerplant's two turbines can generate 78 megawatts of electricity-enough power to supply 100,000 people. The plant was designed so that it could eventually house two additional generators. Warne Powerplant produced an average of 389 million kilowatt-hours of electricity a year during the period of 2002-2006 to supply the State Water Project's energy needs.

WARNE FACILITIES

Warne facilities include Quail Lake and Canal, Peace Valley Pipeline and the Warne Powerplant. Quail Lake, located upstream of the plant, stores water pumped over the Tehachapis. When released, water flows from the lake through Quail Canal and enters the Peace Valley Pipeline.

After dropping 725 feet, water entering Warne Powerplant passes through twelve nozzles directing tremendous force onto two Pelton wheels. Each Pelton wheel turns a separate generator at a speed of 200 revolutions per minute, producing electric energy.

EFFICIENT DESIGN

Warne Powerplant was designed as a model of energy efficiency. Only the most energy-efficient lighting and air conditioning systems were selected and they meet or exceed the California Energy Commission's regulations for nonresidential buildings.

The power plant's design begins with passive conservation principles. First, the powerplant is positioned to take full advantage of sunlight. Large overhangs and insulated reflective glass windows let in daylight while decreasing direct exposure to the sun's rays. Most of the power plant is below ground, enabling it to use the earth as an insulator. The building itself is well insulated and weather-stripped to prevent energy loss.

Though most power plants use part of their own generated energy for heating, cooling, and lighting, Warne Powerplant relies on more efficient means. Direct sunlight, waste heat, and water from Pyramid Lake provide most of the power plant's lighting, heating, and cooling.

AIR CONDITIONING

The air conditioning system at Warne Powerplant uses cold water from Pyramid Lake for cooling the plant air. Cold lake water is pumped through coils, fans circulate air over the coils, and then distribute the cooled air throughout the plant.

LIGHTING

Energy-efficient high-pressure sodium lamps provide much of the lighting throughout the plant. In areas where it is important to distinguish color difference, as with color-coded wiring, conventional lighting is used. In above ground areas of the plant, no artificial light is needed during the day. At night, lighting needed only for the plant's operation and security is used.

WILLIAM E. WARNE

As California's second Director of Water Resources from 1961 to 1966, William E. Warne was a leader instrumental in designing and building the State Water Project. Mr. Warne had previously served as the Director of the Department of Agriculture and the Department of Fish and Game. He later became California's first Secretary for Resources as head of the Resources Agency.